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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,062	03/08/2006	Andrew Rayner	36-1966	1724
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EXAMINER				
PHUNG, LUAT				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/571,062

**Applicant(s)**

RAYNER, ANDREW

**Examiner**

LUAT PHUNG

**Art Unit**

2416

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 March 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-21 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 08 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because Fig 1-3 need descriptive labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 1, 8 and 21 is objected to because of the following informalities:

Regarding claims 1 and 21, an objection is made to the use of the word "can" on line 5. This word constitutes optional language that does not further limit this claim.

Specifically, it is not known whether the limitations following this word are necessary or optional.

Claim 8 should be tagged as "currently amended".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 14-20, claims 14-16 claim "a receiving station"; claims 17 and 18 claim "apparatus"; and claims 19 and 20 claim "a network system". Yet claims 15-20 all depend directly or indirectly from claim 14. It is not clear which is intended to be claimed.

Furthermore, claim 18 recites the limitation "Apparatus as claimed in claim 16" in line 1. There is insufficient antecedent basis for this limitation in the claim. It appears to refer to the "Apparatus" recited in claim 17, and not claim 16. For the purpose of examining, it is assumed that claim 18 depends on claim 17.

***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 14-20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicant appears to claim multiple inventions: receiving station, apparatus including receiving station and sending status, and network system including apparatus and network paths.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-12, 14, 17, 18 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Omuro et al (US 5,241,534).

Regarding **claim 1**, Omuro discloses a method of determining whether one or more of at least two signal paths has been altered, the paths each having a transit time associated therewith, the method comprising the steps of:

monitoring the difference between the transit time of a first signal path and the transit time of a second signal path such that a change in the difference between the transit times of the two paths can be detected; (Fig. 7; col. 7, lines 55+; sending a cell to the rerouting path 25 and the original path 24 and measuring the transmission delay time in each of the rerouting path and the original path; obtaining a difference between the transmission delay times) and,

in dependence at least in part on any such detected change, generating an alarm signal. (Fig. 8; col. 7, lines 64+; the difference between the transmission relay times being notified to the change-back processing apparatus 11)

Regarding **claim 2**, Omuro further discloses wherein the difference between the transit times of the paths is monitored by:

introducing marker signals onto the first and second paths at respective entry points; (Fig. 7, 9; col. 9, lines 4+; generating two delay measuring cells which are respectively transmitted to the virtual paths 24 and 25; transmission time being written into cell transmission time field of each delay measuring cell)

receiving the marker signals at respective collection points along the first and second paths; (Fig. 7, 9; col. 9, lines 41+; obtaining reception times when each delay measuring cell is received) and,

monitoring the arrival times of the marker signals in one path relative to the arrival times of marker signals in the other path. (Fig. 7, 9; col. 9, lines 56 to col. 10, line 3; obtaining and recording the cell arrival times for both the rerouting path and the original path)

Regarding **claim 3**, Omuro further discloses wherein for each marker signal introduced onto one path, a corresponding marker signal is introduced onto the other path, and wherein the difference in the arrival times of corresponding marked signal is used to monitor the difference in the respective transit times associated with the first and second paths. (col. 9, lines 22+)

Regarding **claim 4**, Omuro further discloses wherein the difference in the time of arrival of marker signals is monitored. (col. 9, lines 22+)

Regarding **claim 5**, Omuro further discloses including the step of introducing into each marker signal an indication of the relative time at which that marker signal was introduced onto a path, the relative time being measured relative to a clock source. (col. 9, lines 22+)

Regarding **claim 6**, Omuro further discloses wherein a marker signal in one stream includes an indication of the time at which that marker signal was introduced relative to the time at which a marker was introduced into the other stream. (col. 9, lines 22+)

Regarding **claim 7**, Omuro further discloses wherein the first and second paths extend between a common upstream location and a common downstream location. (Fig. 7; col. 8, lines 20+)

Regarding **claim 8**, Omuro further discloses wherein the first and second paths extend between a common upstream location and a common downstream location and wherein the common upstream clock source is located at the upstream location. (Fig. 7, 8; col. 8, lines 20+)

Regarding **claim 9**, Omuro further discloses wherein each path carries a respective signal stream, the signal stream carried by the first path being representative of the same content as the signal carried by the second path. (Fig. 7; col. 8, lines 45+)

Regarding **claim 10**, Omuro further discloses wherein the relative time of arrival of marker signals is measured relative to a common downstream clock source located at the downstream location. (Fig. 7, 8; col. 8, lines 20+)

Regarding **claim 11**, Omuro further discloses wherein the difference between the transit times of the two paths is determined by receiving marker signals from respective entry points on the first and second paths, and monitoring the arrival times of the marker signals. (Fig. 7, 9; col. 9, lines 56 to col. 10, line 3)

Regarding **claim 12**, Omuro further discloses wherein each marker signal includes a time stamp indicative of the time at which that marker signal was introduced onto a path relative to a clock source (col. 8, lines 39+), the method including the further step of reading the time stamps and taking into account the time difference between the time at which packets have been introduced onto the first and second paths when determining the difference in the transit times of the two paths. (col. 9, lines 41+)

Regarding **claim 14**, Omuro discloses a receiving station for receiving data from a sending station sent over at least a first path and a second path (Fig. 7; col. 8, lines 20+; node 22 receiving delay measuring cell from node 21 sent over rerouting path and original path), the paths each carrying respective marker signals (col. 9, lines 22+; each path carrying cells containing time fields), the receiving station having a reading stage for detecting the presence of marker signals (col. 9, lines 41+), and for monitoring the time of arrival of marker signals from one path relative to the time of arrival of marker signals from the other path (col. 9, lines 41+), and a processing stage for determining, in dependence at least in part on the monitored arrival times, the difference in transit times



between marker signals travelling along the first path and the transit time of marker signals travelling along the second path. (col. 9, line 41 to col. 10, line 20)

Regarding **claim 17**, Omuro further discloses an apparatus for sending and receiving data over a network, including a receiving station as claimed in claim 14, and a sending station, the receiving and sending stations being connectable to the network, the sending station being configured, when connected to the network to: send data on a plurality of paths, the data including marker signals, each marker signal including a respective time stamp, the time stamp of a marker signal being indicative of the relative time at which that marker signal was transmitted. (Fig. 7; col. 8, line 20 to col. 9)

Regarding **claim 18**, Omuro further discloses wherein the sending station includes a common clock source, the indication of a relative time included in each stamp being a time measured relative to the common clock source. (col. 9, lines 22+)

Regarding **claim 21**, Omuro discloses a receiving station which is connectable to a plurality of paths, each path having a transit time associated therewith for data transport along that path, the receiving station having means for: monitoring the difference between the transit time of a first path and the transit time of a second path such that a change in the difference between the transit times of the two paths can be detected; and, in dependence at least in part on any such detected change, generating an alarm signal. (Fig. 7, 8; col. 7)

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 13, 19 and 20 are rejected under U.S.C. 103(a) as being unpatentable over Omuro, et al.

Regarding **claim 13**, Omuro discloses all of the subject matter as previously presented in this office action except wherein each path carries video data. However Omuro discloses transmission of data in an ATM network. Examiner takes official notice that it is well known to one of ordinary skill in the art at the time of the invention that ATM is used for high-speed data transmission such as video. Thus it would have been obvious to use the ATM network of Omuro to carry video across each of the rerouting path and original path.

Regarding **claims 19 and 20**, Omuro discloses a network system including: apparatus for sending and receiving data over a network; and, network paths each of which extends between the sending station and the receiving station. (Fig. 17; col. 8, lines 20+) Omuro discloses all of the subject matter except the sending station and the

receiving station being separated by a distance of more than 10 km, and wherein the distance separating the sending station and the receiving station is at least 100 km. However Omuro discloses a number of nodes separating the two end nodes (col. 2, lines 24+). Examiner takes official notice that it is well known to one of ordinary skill in the art at the time of the invention that the distance between two network nodes is a design choice. Thus it would have been obvious to implement the sending station being located at least 10 km or 100 km from the receiving station in order to meet the service requirements.

10. Claims 15 and 16 are rejected under U.S.C. 103(a) as being unpatentable over Omuro, et al. in view of Ishioka (US Pub. 2002/0071391).

Regarding **claim 15**, Omuro further discloses wherein the processing stage is configured to perform the following steps:

- (i) calculate the difference between the transit time of a marker on one path and the transit time of another marker on the other path; (col. 9, line 65 to col. 10, line 3)
- (ii) repeat step (i) for each pair of subsequently received markers; (col. 9, line 65 to col. 10, line 3) and,

Omuro further discloses calculate the difference in transit time associated with received pairs of markers (col. 7, lines 55+; calculating the guard time, which is the difference between the times it takes to travel the two paths) and generate an alarm signal (col. 7, lines 64+). However Omuro does not explicitly disclose:

(iii) if a change in the difference reaches a threshold value, generate an alarm signal.

Ishioka from the same or similar fields of endeavor discloses determining the relationship between routes in terms of transport times, determining which routes takes more times and notifying an external entity of the result (para. 42, 49). In Ishioka, a test packet is used to provide reference times, used to calculate the reference packet transport time, interpreted as the threshold (para. 22, 28, 29). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to combine the test reference packet of Ishioka in the network of Omuro. The motivation for doing so would have been to select a best route for data transmission.

Regarding **claim 16**, Oshioka further discloses wherein an alarm signal is generated only if the threshold value has been reached a predetermined number of times within a time period. (para. 42, 46, 49; notifying selected route after a series of evaluation tests)

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (see form 892).
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUAT PHUNG whose telephone number is (571) 270-3126. The examiner can normally be reached on M-Th 7:30 AM - 5:00 PM, F 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. P./

Examiner, Art Unit 2416

/Ricky Ngo/

Supervisory Patent Examiner, Art Unit 2416